THE VETERINARY RECORD

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The Dublin Veterinary Conference.

Among the various conferences held at the Health Congress at Dublin last week none was more successful than that of the veterinarians. The veterinary conference was opened on Friday at 10 a.m., under the presidency of Mr. M. Hedley, the Chief Veterinary Adviser of the Government in Ireland. A crowded day of work commenced with an address from the Chair. After welcoming strangers and professional colleagues from this side of the channel, the President devoted his remarks to a brief historical review of the subject which was to form the sole topic of discussion—viz., Tuberculosis.

No less than seven papers were then read and discussed. None of the essays were long ones, each treated the subject from a different point of view, and all met with a favourable reception. The audience was mostly a veterinary one, but the exceptions were notable as being representatives of important bodies directly interested in the question. Members of the meat and milk trades were present and took their part in the discussion. Representatives of Local Authorities were present and gave their views. Agricultural interests were well stated by Mr. Middleton, and a thoroughly judicial view of the disease and its necessities was expressed by Mr. Cooke Trench, one of the members of the Royal Commission, whose report only recently was published.

We hope shortly to be able to publish a summary of the papers read and the discussion which followed. Meantime it may be of interest to give the titles of the papers as an index of the thorough manner in which the conference handled its subject. They were:—

1. *The Utilization of the Flesh of Tuberculous Animals*, by Professor Dewar.

2. *The Milk of Tuberculous Animals in its relation to Public Health*, by F. C. Mason, M.R.C.V.S.

3. *The Housing of Cattle, its Bearing on the Elimination of Tuberculosis*, by Thomas McGuinness, B.A., M.R.C.V.S.

3. *The Comparative Duties of Medical and Veterinary Officers in dealing with Tuberculosis in its relation to Public Health*, by Wm. Hunting, F.R.C.V.S.

5. *Tuberculin and its uses for the Suppression of Tuberculosis in Cattle*, by Sidney Villar, F.R.C.V.S.

6. *On the Agricultural Aspect of Tuberculosis*, by T. Cooke Trench, D.L.

7. *Compensation for Tuberculosis*, by Charles Middleton.

To say that all these subjects were exhausted in the discussion would be an obvious exaggeration, but the salient points of each were fairly dealt with. Time alone prevented a fuller consideration. Truth to tell the speakers were rather handicapped by the inexorably firm chairman who limited speeches to a few minutes, and so got through in a day what at first appeared to be a good week's work.

The Health Congress in Dublin has been throughout a great success, and the Conference of veterinarians not the least attractive section. England and Scotland were well represented, and Ireland revealed some writers and speakers till now unknown, but of whom it is safe to say we shall hear again. Hidden talent is a waste our profession cannot afford.

Veterinarians in Dublin.

The Health Congress drew to Ireland a large number of Veterinary Surgeons, most of whom remained to do the Horse Show. The Irish Veterinary Medical Society took advantage of the assembly to hold a meeting and invited their professional brethren to attend not only the business gathering, but afterwards a supper at the Gresham Hotel. A paper on "Some Theories of Horse Shoeing" was read, and a lively discussion followed. More important, perhaps, than this was a question of union and co-operation which arose. There are two veterinary societies in Ireland. Many practitioners are members of neither. At the Gresham Hotel on Monday it was suggested that these two societies should amalgamate. The suggestion was received with applause, and many gentlemen who had stood aloof at once signified their intention of becoming members. Reference was also made to the National Veterinary Association and our Irish *confrères* expressed pleasure at the promise more than half made at Leeds that the "National" should go to Dublin in 1900. Of course no decision could be arrived at without the assent of the Council of the N.V.A., but it may be taken as certain that the Irish veterinary surgeons will invite the National to meet in Dublin in1900 and that an enthusiastic and hospitable reception awaits the Association.

It is perhaps looking rather far ahead to anticipate veterinary re-unions in the first year of next century, but if we are to give practical effect to the motto of our corporate body we must leave no stone unturned to bind closer and closer the ties of professional brotherhood. Good, and good only, comes of knowing each other.

CASES AND ARTICLES.

DISEASES OF BRITISH EAST AFRICA.*

By Vet.-Capt. A. J. Haslam, B.A., M.D., C.M., F.R.C.V.S.

c/o H. B. Majesty's Consul General,
Zanzibar, E. Africa.
June 15th, 1898.

Sir,

I desire to place on record that I have found the living trypanosoma of Tsetse fly disease in several other flies than the Tsetse fly. I was lead to search for these organisms by the fact that the mules of the Transport Department which I direct in East Africa showed greater sickness and mortality from one to five weeks after passing through the Tsetse belt (some 80 miles beyond) than for a period of eight months work in the belt itself.

These flies at first appear to resemble the ordinary village flies in size and appearance, but they are provided with a long and jointed proboscis which is relatively longer to body length than even that of the Tsetse fly. These flies, like the Tsetse fly, bite human beings with little or no effect beyond the sharp sting. I have also seen them on all domestic animals and on wild game. This result has been obtained many miles away from the Tsetse fly areas, by microscopic examinations of the blood obtained from the posterior part of the abdomen of flies caught sucking the blood of mules suffering from Tsetse fly disease.

Should it be proved that these other flies actually convey the disease, another link in the causation of this mysterious disease will be established. Since the trypanosoma of "surra" and Tsetse fly disease are supposed to be allied or identical it is conceivable that both diseases may be found to be more frequently communicated by other diptera than of the glossina genus; and search might be made in India with this object in view. At present, I am of opinion the two hæmatozoa show microscopic differences, and I doubt the existence of ordinary equine surra as endemic in British East Africa. By ordinary surra I mean that traceable to the food or water supplies—as is usually done in India.

Horses, mules, and donkeys die in East Africa from Tsetse fly disease; and of all diseases I know of none can give rise to such a variety of symptoms! Dogs generally enjoy freedom from the disease in the fly country. There are not many dogs kept, but I only know of two authentic cases of dogs dying of this disease.

Oxen also die in the Coast belt, or within about 180 miles along the road from Mombasa. They die from a disease characterised by the presence of a trypanosome in the blood. This disease is in no way associated with the bite of Tsetse fly. I have also, for the past nine months regarded the hæmatozoon of oxen as slightly different microscopically from that of the Tsetse disease of mules, but higher powers of microscope will doubtless settle this point. I have provisionally termed this disease "ox surra." This disease, however, is very fatal, with a sickness and mortality much greater than in the case of mules from Tsetse disease, and thus differing from descriptions of Indian ox surra. It is equally fatal in Tsetse fly country and where there has certainly been no Tsetse fly for a year and places 130 miles away from the nearest "fly belt," where mules and horses have lived in good health. As yet I cannot state precisely the source of its hæmatozoon, but I suspect an intermediate host will be found to be one means of contagion, and this will be searched for on my return to where the disease exists. I have indeed caught flies before mentioned as carrying the living Tsetse organisms on bullocks suffering from ox surra, but as yet I have only examined those sucking the blood of mules. Cattle fed on clean dry hay and corn and condensed water, or on grass and quickly running streams, have alike died of the disease. The disease has been much more fatal to Indian oxen than to indigenous breeds. It is in no way associated with rainfall, in fact nearly all deaths have occurred in the dry season. Many oxen have died from the disease within a week or a fortnight from landing at Mombasa. Such animals have arrived in apparently perfect health and their blood has not shown the organism, but when cattle become sick their blood as seen under the microscope is usually literally swarming with wriggling trypanosoma. This has happened when grazing has not been allowed, the food being apparently good, and clean Indian hay and fresh bran and condensed water. Likewise this has occurred when animals have had dry food and well water—the well being very deep but the water percolating through slowly at the bottom. Again cattle which have had no imported food and have grazed only on dry lands have equally suffered from this disease. It seems that the ordinary sources of Indian equine surra do not usually obtain in East Africa where oxen have been used, and it is difficult to imagine the large number of simultaneous cases in different localities as spread from one or a few imported or even indigenously diseased animals.

The disease is characterised by extravasation of of blood, ecchymoses, or petechiæ under serous and mucous membranes and into connective tissues, but there are no congestions or signs of inflammation present. The disease attacks camels and is very fatal; but as yet I have not detected it in sheep and goats, or dogs, and there are many of these latter at Mombasa where the disease has been so fatal to oxen.

Of the relations between equine Tsetse fly disease of East Africa, ox surra of East Africa, equine surra of India and ox surra of India, I would withold an opinion until more work has been done.

You will also be interested to know rinderpest is prevalent in the interior, beyond the Coast belt, and that the Government are endeavouring to stop its spread. I am engaged in this work and am doing so in one direction by two cordons of Masai warriors and Wahamba Police. Slaughter of all infected cattle would mean tribal risings everywhere. Sheep and goats also suffer from this disease and have died in large numbers. Pleuro-pneumonia contagiosa has been reported by *political district officers.*

* This letter reached us on 23rd inst. bearing post mark Mombasa, July 18th. A short note of Capt. Haslam's death appeared in our issue of August 13th.

Horse sickness is said to exist by a "Transport rider" from the Cape, but the mules with which he works in my opinion show symptoms of the chronic form of Tsetse disease, and the organism was found in one sick mule's blood.—I am, sir, yours faithfully,

A. J. Haslam.

P.S.—I wish to place on record that I have found a filaria in the blood of the subcutaneous tissues in horses in East Africa. It is 50 or 60 times the length of a red blood corpuscle and about three-quarters of the length of a red blood corpuscle in width, and is most actively motile.

A. J. H.

TUMOUR ON A LOWER JAW.

By Wm. M. Scott, M.R.C.V.S., Bridgwater.

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The subject of the above sketch I had the good fortune to casually come across while doing a holiday in the North.

Having been forcibly struck with the unique nature of the case I made a rough sketch and gleaned the following history. The animal, an active cart horse, probably 9 years old, previous to coming into present owner's possession had a small swelling on the lower jaw and under the incisor teeth. This swelling (if I am rightly informed) had commenced to show itself after the extraction of one or two teeth of the same jaw, increasing in size until it attained its present dimensions. The surface of the growth was perfectly smooth and glistening, but in patches slightly cyanotic. The covering was a continuation of the oral mucosæ, non-sensitive to the touch but highly vascular when cut with a lancet. When incised it gave one the impression of cancellated tissue.

One word about the patient himself. He was in fair hard working condition. By reason of the gradual growth of the tumours nature had accommodated herself to a remarkable degree, in fact prehension was performed with comparatively little inconvenience, an act at first sight one would consider almost impossible. The tumour was probably an osteo-chondroma or a chondra-sarcoma. Surgical interference I think was fully indicated. The growth could be removed *en masse*, and the displaced lower lip reflected over the seat of the tumour.

The rarity of this pathological growth must be my sole apology for recording the same.

BARIUM CHLORIDE.

By W. Alston Edgar, F.R.C.V.S., Dartford.

The attention of the profession has been recently directed by Vet.-Major Nunn, to the above drug in the treatment of intestinal obstruction due to retention of fæces. (*The Veterinary Record*, No. 517, p. 703, and No. 525, p. 58.)

Major Nunn remarks that, "The action of the drug is no doubt very violent, and it cannot be used rashly." The violence of its action depends very much upon the quantity administered and the method of administration.

The intravenous method suggested by Dieckerhoff has the advantage of being the most rapid in producing the physiological effect, viz., contraction of the muscular walls of the intestines, but the dangers of that method have not been sufficiently pointed out in recording the great value of the drug.

Barium chloride is a most dangerous irritant when injected into the subcutaneous connective tissue and such an accident is not unlikely to happen in attempting to inject into the jugular vein in horses with a thick, full, channel to the neck.

Stranghan records a fatal case due to hæmorrhage after sloughing of the jugular vein. (*Vet Journal*, vol. 44, p. 310.)

Another veterinarian, whose name I have forgotten has also recorded a case of sloughing through of the jugular vein.

A case came under my own notice where an assistant injected the drug subcutaneously in the pectoral region and such severe œdema of the chest and fore legs supervened that the patient had to be retained in infirmary for over a week.

I wish to confirm the observations made by Möhring (translated in *The Veterinarian*, vol. 68, p. 754) who administered barium chloride ten grammes in a bolus, and obtained the desired result in two hours. It is a rapid and safe purgative in the horse, administered as a drench in doses from ʒiv. to ʒj. (the latter being the maximum dose I have at present given to the horse) dissolved in six ounces of water, the disagreeable flavour can be masked by mixing with simple syrup or theriaca.

It causes free evacuation in a healthy horse in from three to six hours, depending upon the dose chosen for the size of the animal.

My object in writing, however, is to call attention to the value of the drug as a *cardiac and vascular tonic* in the horse.

I believe when it has had an extensive trial and its

exact posology is understood it will supersede digitalis or digitalin, which are frequently disappointing.

Its effect on the heart and pulse is well known to those who have used it at all frequently in intestinal cases. It appears to have a remarkable power of giving tone to involuntary muscle fibre. I have used it chiefly in weakened and dilated hearts so common in fruit farm horses, and not infrequent in hunters, in doses of from 30 to 60 grains, night and morning, administered in the drinking water, or as a powder mixed with two drams of lactose in the cut manger food. Its use should be kept up for two or three weeks or longer if necessary.

Since the accidental discovery of the Barium Chloride Springs, at Llangammarch Wells, the waters have been increasingly valued by the medical profession in treatment of chronic heart-disease, and the drug has found a permanent place in medicine. As in the natural springs a very large percentage of sodium chloride is present it is probable that the value of the drug may be enhanced by admixture with that salt, in the food. Salt certainly forms a convenient base with which to prescribe it for immediate use.

A NEW FORM OF PSEUDO TUBERCULOSIS IN CALVES.

By M. H. Vallee.

In 1884 Malassey and Vignal described for the first time under the name of "zoological tuberculosis" a disease caused by an organism very different to Koch's bacillus.

In 1885 Nocard discovered it in the fowl, and since then Eberth and Pfeiffer in Germany; Charrin and Roger, Nocard and Messelin, Dor, Grancher and Icdony-Lebard, in France; Zagari and Parietti in Italy have reported cases of pseudo tuberculosis in which the microbe is the same as that of Malassey and Vignal.

Preisy has studied several of these forms and has come to the conclusion that they are identical, caused by the same bacillus which presents characters that enable it to be identified.

In 1894 Preisy and Guinard (*Journal de Médecine Vétérinaire*) reported a pseudo tuberculosis in the sheep, caused by a bacillus, that from a morphological point of view much resembled that of diphtheria (M. Nocard has proved that the bacillus of Preisy-Guinard is the same as that which produces ulcerative lymphangitis in the horse. *Annales de l'Institut Pasteur, 1896*).

The disease I now bring to notice is totally different to any of those previously reported, and appears to be confined to calves.

Clinical Appearances.

The disease was observed on a farm at Motte Beuveon, carrying 35 head of cattle, and for a long time past they had annually lost about a dozen calves. They died in a few days, the symptoms were always the same, and there could be no doubt that the disease was contagious.

The calves were taken ill 8 to 15 days after birth and died in 4 to 8 days without showing any other symptoms than extreme weakness and total loss of appetite. On post-mortem examination all the organs appeared healthy except the liver.

In 1898 the liver of one of the cases was sent to Alfort for examination and came under my observation. The subject was a little more than a week old and had died within five days of first being attacked. The liver retained its normal volume, but the surface was covered over with a number of fine granulations or tubercules of a greyish colour, and in some cases confluent. There was slight perihepatitis, and the tissue of the gland was very friable.

On section the granulations were found to exist in the deep structure of the gland.

Bacteriology.

A fine bacillus was obtained from the hepatic tissue in great abundance, which readily took Gram's stain. Sections stained by the Gram Nicolle process also showed the same bacillus. The organism is extremely fine, much smaller than that of swine fever (*Rouget du porc*). It is sometimes found isolated, sometimes in small masses in any part of the diseased tissue, but I have never yet found it where it is healthy.

When isolated and cultivated in different media it produces the original lesions in the various animals experimented upon.

Cultures.

Broth.—It grows rapidly in peptonised bouillon. The medium becomes turbid in a few hours, and the development is complete in four to five days. If shaken silky clouds are seen like those in fowl cholera culture. A deposit of a greyish colour and somewhat adhesive forms at the bottom of the tube, the fluid above becoming clear. The odour of the bouillion is not changed, and it still remains alkaline. The addition of a small quantity of glycosa or 5 per cent. glycerine does not facilitate the growth.

In fresh acid bouillion the growth is rapid, and is particularly so in the glycerinated water used for the preparation of potato cultures of tubercle bacillus.

Gelosa.—On gelosa at 38dgs. the culture is as rapid as in peptonized bouillon, but not so abundant. After a few hours very small colonies appear with well marked borders. They are only visible by being more transparent than the surrounding medium. They do not increase much in size, even after several weeks' growth, and the diameter seldom exceeds 0·5 to 1 millimetre. With age the edges lose their distinctness, and the colonies appear only as white semi-lucid patches. The line cultures are of a blueish grey transparent appearance, the borders being finely marked and wrinkled. By puncture the culture is in a grey granular line and very regular, but is larger and more developed in the substance of the media than on the surface.

Glycerine and gelosa the growth is the same.

Gelatine.—The colonies appear after 36 to 48 hours, and are small and round, blueish in colour, and penetrating into the media. With age the colonies enlarge, become thicker in substance, and white and creamy. In line culture the growth is

thick and creamy, the borders of the line being sharp and distinct. In puncture cultivation the growth is the same as on gelosa.

Serum.—On gelatinized serum, either horse or ox, the culture is the same as on gelosa, only slightly more moist.

Potato.—The organism grows actively, but is not very visible. In a good light a clear lustrous line will be seen on the culture line, and from which a rich growth can be obtained with a wire or spatula. There is no difference if glycerine is used on the potato.

Biology.

On every medium the organism grows as a very small bacillus; immobile and a little longer than it is broad. The ends are rounded. It is slightly curved, but generally rigid. It is frequently doubled "diplo-bacillus" but generally single. I have never yet found it in chains. It takes all the aniline stains, but its resistance to the Gram Nicolle process of decolouration is remarkable. It grows equally well in a vacuum or an inert gas. It does not seem to form spores, and even in old growths I have never found it degenerated from its original form. Culture is possible in acid bouillon, but the organism soon dies. A succession of cultures causes it to lose its virulence, although it retains its form and power of growth.

In neutral and alkaline media it retains its virulency a long time. After three months culture it will kill guinea pigs when injected into the peritoneum.

Ten minutes exposure to 67 C. will kill the organism, cultures in bouillon are sterilized after five minutes exposure to 70 C., but a temperature of 60 C. for 20 minutes will not sterilize a new culture.

It does not cause sugar to ferment, and grows well in milk without causing coagulation. It does not produce indol.

Toxines. Bouillon cultures kept at 70° cent. for a quarter of an hour or filtered through a Chamberland filter lose their activity. Inoculated subcutaneously in the guinea pig or rabbit they give a temporary rise in temperature. In animals previously infected there is no re-action.

Pathological Action.

Pure cultures were inoculated into guinea-pigs, rabbits, calves, pigs, dogs, and pigeons. The reaction of the rabbit could not be depended upon as it was variable.

Guinea-pig Intra peritoneal injection, ingestion, and intra-venous inoculation always killed in 7 or 8 days, with great rise of temperature, rapid emaciation, and cachexia. The peritoneum was slightly infiltrated and congested, and the abdomen contained a certain quantity of fluid, with fibrous flocculi in suspension. The mesenteric ganglia were gorged with lymph. The spleen generally soft and hypertrophied, but I never discovered any tubercles in it. The liver is the chief seat of disease; it retains its normal dimensions, is often completely disintegrated, and yellow in colour, and in fact very closely resembles what is seen in true tuberculosis. Under the capsules and in the hepatic tissue the small miliary tubercles are found either isolated or confluent, but always of a small size.

The kidneys appear normal, nevertheless the kidney pulp will always yield pure cultures of the bacillus. The organism can always be detected in scrapings of the liver, but in the spleen it is rare except in cases of inoculation with virulent material. No lesions are to be found in the thorax, they are confined to the abdomen; but cultures can be obtained from the blood if large quantities are used.

Subcutaneous inoculation of guinea pigs is not fatal. At the site of the inoculation a hard nodule forms, which in a few days softens and absorbs without ulcerating. Sometimes the neighbouring ganglia are affected, but this is entirely local. Only one animal inoculated subcutaneously died and this presented well marked lesions of the liver and considerable enlargement of the spleen, but probably a vein was wounded and the organism gained access to the system through the current of blood.

Rabbit. This animal is very sensible to intra-venous inoculation, 5 to 10 drops of pure culture killing in from 48 to 62 hours. Intra-peritoneal injection is, however, much less active than in the guinea-pig, more than half resisting doses of 1 to 2 c.c.

By intra-venous injection rabbits die with great increase of temperature, and diarrhœa. There is rapid emaciation, but I have never noticed icterus. The liver is generally completely disintegrated, but the other organs healthy. The urine is albuminous, and the organism is contained in the blood, spleen, and kidneys.

When death follows intra-peritoneal inoculation, the liver is found studded over with small tubercular masses, either isolated or grouped together in clusters the same as is seen in the guinea-pig. There is also hypertrophy of the spleen and mesenteric ganglia.

In one subject I observed pulmonary lesions. On each lung there were four or five greyish tubercles situated beneath the pleura, but none in the parenchyma of the organ. They were isolated and measured 1·5 to 2 mm. in diameter. On section they were caseous and contained the bacillus. The bronchial and mediastinal glands were healthy.

Subcutaneous inoculation is inert in the rabbit.

Pig. An inoculation of 5 cc. of virulent culture in broth was made into a vein on the ear. Ten hours after there was a rise of 2·8 degrees in temperature that lasted the following day. It then fell, and two months after the animal remains in good health.

Dog. An intra-venous injection of 3 cc. in the dog is fatal 48 hours being sufficient to kill a dog 30 lbs. in weight. On post-mortem only the liver is diseased.

Pigeon. Subcutaneous inoculation is inert, but intra-venous injection of even a minute quantity will cause death in 36 to 48 hours.

Calf. Ingestion of 100 cc. and intra-venous injection of 5 cc. of culture gave no result, but this can be accounted for by the age of our subjects which were several weeks old, whereas those naturally attacked were only a few days.

Pathological Anatomy.

The characteristic lesions of the liver are only seen if the animal lives for 5 to 6 days. If death takes place before the whole organ appears to be disintegrated. If the culture is attenuated or the dose small death takes place slowly and the usual tubercles are found. They are of small size the largest about as big as a millet seed, the smallest hardly visible. They are not easily felt when the hand is passed over the organ, as they are buried in the tissue. On section they are seen to be near the surface, few if any being in the deep tissue.

The starting point is always from a capillary, the endothelial cells being first tumified and forming an intra-vascular tubercle, later on the tissue of the gland is invaded. The tubercle at first is a mere mass of leucocytes in the degenerated liver tissue and quite amorphous in character, but after a time as it matures two distinct zones form, an external composed of altered hepatic cells and an internal composed of the debris of the protoplasm. The hepatic cells in the external zone are altered in appearance, the nucleus is faint, and the cell filled with a granular material. I have never detected any giant cells in the tubercles or noticed that they had undergone calcification.

The bacillus is not distributed uniformly, although it is abundant. In the newer formed tubercle the leucocytes are seen filled with bacilli, and in sections by Gram's process they appear as large violet or black patches, later by the destruction of the cells the bacilli are set free, and they then collect in masses at the limit of the external zone. The histological appearances of the pulmonary tubercles in the rabbit are identical with those of the liver, and in all cases they closely resemble those of glanders in the horse.

The fact of the liver only being affected would appear to point to either ingestion or inoculation through the umbilical vein being the way the organism gains access to the system, and as experimental cases appear to contract the disease almost as readily by ingestion as intra venous inoculation it would appear that it is due to the former, also that when the calves are fed on boiled milk and thorough disinfection carried out the malady disappears.

Translated from *Recueil de Médecine Vétérinaire*, by Joshua A. Nunn, F.R.C.V.S., Vet.-Major, A.V.D.

Note.—*Vide* Article on "False Tuberculosis in pig, sheep and goat," by Sidney Marsden, M.D., Birkenhead. (p 522) *British Medical Journal*, 13th August, 1898.

Treatment of Tetanus in Man According to Baccelli.

The treatment of tetanus by Baccelli's method, *i.e.*, by the subcutaneous injection of a solution of 2 to 3 per cent. carbolic acid (3 to 4 centigrammes for a dose until about 35 centigrammes have been injected in the 24 hours) continues to excite much attention in Italy. The carbolic solution acts as curative serum on the tetanus poison circulating in the blood, besides on the nerve elements already affected by the poison.

This treatment is easy for the doctor to carry out and costs little. Ascoli has made a report on the treatment by this method to the Medical Academy in Rome.

The proportion of deaths to cases treated by the different methods is given below, according to

Baccelli's method	1·30.
Tizzoni's serum	8·40.
Behring's serum No. 1	4·11.
Behring's serum No. 2	2·9.

The fact that so large a quantity of carbolic solution can be taken into the system without appearances of intoxication the author declares to be due to a special resistance of the tetanic poison against the remedy.—(*Munich Med. Woch. Dtsch. Med. Zg.*)

On Abcess of the Liver in the Horse.—By Prof. Albrecht.

Affections of the liver in the horse are very hard to diagnose. Icterus is by no means always present in liver diseases. Abscesses of the liver occur very seldom in the horse and are certainly the hardest to establish. Albrecht has only once treated a horse with abscess of the liver. The horse began to eat badly five weeks after the commencement of the illness, and showed colicky pains. On examination it was seen to be emaciated. The mucous membranes were not stained, the pulse was quick and full. Peristalsis was sluggish, dung in little balls, and light coloured but by no means acholic. The urine was brownish, slightly acid, and contained albumen. The rump was held stiffly. The temperature varied between 40 and 41. There was often a feeble cough. But the respiratory tract was perfectly normal. The horse refused to eat and died 12 days later, having a remarkably quick pulse.

Post-mortem. Respiratory apparatus normal. One litre of reddish turbid fluid in abdominal cavity. Digestive apparatus normal as well as the mesenteric glands. In the liver one large and numerous small abscesses, the former as long as one's finger with a wall one millimetre thick; the small abscesses as large as walnuts. The spleen enlarged about a third.

Prof. Albrecht records a second case in which there was cough, quick pulse, and high temperature. He opines the cough to be reflex. Says it is worthy of note that in neither case was there icterus.—*Berliner Thierarzt Woch.*

PASTEUR.*

By N. Almond, F.R.C.V.S., Chelmsford.

Mr. President and Brother Members,—Having the most profound regard and respect for the memory of Pasteur, I could well wish the duty I have now to perform had fallen upon one who could have done greater justice to him and his work. It is no exaggeration to say there is no name connected with science so universally known, and in so many different connections, as that of Pasteur. The chemist, physicist, biologist, and medical man each view him as the author of some of the most important, novel, and fruitful departures in their several branches of knowledge, whilst in the spheres of trade and agriculture his influence has also been deeply felt and gratefully acknowledged. As we trace a river

*Read before the meeting of the Eastern Counties V.M.S., at Colchester, July 7th.

to its source, so is it sometimes pleasant to examine the beginnings of great men. One of Pasteur's biographers introduces him in the following manner: Come, M. Pasteur! you must shake off the demon of idleness! a call uttered by the night watcher of the College of Besancon, who invariably, at four o'clock in the morning, entered his room and roused him with this vigorous salute, which was accompanied, when necessary, by a sound shaking. Pasteur at this time was eighteen years old, and in addition to his board and lodging the Royal College paid him 24 francs per month.

Louis Pasteur was born on December the 27th, 1822, at Dôle, and the announcement may be seen on the facade of the little house in which the event took place.

The life of his father had been a rongh one, he was an old soldier, and had been decorated on the field of battle. On returning to France, where he no longer had a home, he was obliged to work hard to earn his bread. He took up the trade of a tanner, and soon after married. He is described as being calm and reflective, more eager, whenever he had a moment of repose, for the society of books than for that of his neighbours. Both he and his wife appear to have been devoted to their son, and from the first they used to say, "We will make of him an educated man." In 1825 the Pasteur family left Dôle and bought a small tan yard at Arbois, at which town, and in his father's tanyard Pasteur spent his childhood. When old enough he was sent to the Communal College, and notwithstanding his laborious occupation his father superintended his son's lessons every evening. This at first appears to have been no sinecure, as the boy did not always take the shortest road either to reach his class or to return home. He appears to have been fond of fishing parties, which proved so pleasant that they were continued almost to the end of his long life. Instead of applying himself to his lessons, he is said, often to have escaped, and amused himself by making large portraits of his neighbours, male and female, a dozen of which may still be seen in the houses of the Arbois, all bearing his signature. At this time he was only thirteen, and the accuracy of the drawings is said to have been astonishing.

After a time, however, he began to realise the sacrifice his parents were making for him, and determined to abandon his fishing implements and his crayons; a passion for work was aroused within him which was to form the foundation of his success in life; he outstripped all competitors at the College at Arbois, and the principal encouraged in him an ambition to become a professor in one of the Royal Colleges. There being no professor of philosophy at Arbois, Pasteur quitted it for Besancon, obtained at the end of the scholars year the degree of Bachelier-es-lettres, and was at once appointed tutor in the same college, where, owing to his singular maturity of character, he had the superintendence of the quarters of the older pupils confided to him, and of his rule it is said "Never had so young a master so much authority, and at the same time so little need for its exercise." His taste for chemistry manifested itself by frequent questioning, so often repeated, that he is said to have quite bewildered the professor, who ended by declaring that it was for him to interrogate Pasteur, and not for Pasteur to interrogate him. At the examination for the Ecole Normale Pasteur passed fourteenth on the list; being dissatisfied with this position he began a new year of preparation in Paris, and when again the examination arrived was placed fourth on the list, and entered that institution in October, 1843. His taste for chemistry had now become a passion which he could satisfy to his heart's content.

Isolated in laboratory or library, Pasteur's only thought at this time is said to have been to search, to learn, to question, and to verify. The rule of the school leaves much to individual initiative, and it appears certain that Pasteur owed to the freedom of work and to the facilities for solitary reading, which he there enjoyed, the first occasion for an investigation which was the starting point to a veritable discovery, his speculations having led to the foundation of that most fascinating and fertile field of chemical science, now known as "stereo-chemistry," and prepared the way for some of the greatest achievements of modern chemistry, such as the artificial production of natural sugars, etc.

Among the teachers in the school by whom Pasteur was most encouraged, was M. Delafosse, who had devoted himself to questions of molecular physics; Pasteur conversed with him incessantly about the arrangements of molecules etc., when an unexpected note from the German chemist Mitscherlich, communicated to the Academy of Sciences, came to trouble all his scientific beliefs. Here is the note: "The paratartrate and the tartrate of soda and ammonia have the same chemical composition, the same crystalline form, the same angles, the same specific weight, the same double refraction and consequently the same inclination of the optic axes. Dissolved in water their refraction is the same, but while the dissolved tartrate causes the plane of polarised light to rotate, the paratartrate exerts no such action. M. Biot has found this to be the case with the whole series of these two kinds of salts. Here (adds Mitscherlich) the nature and the numbers of the atoms, their arrangement, and their distances apart are the same in the two bodies." This was a direct challenge in which a great principle was involved, and it is given at length because the solution of the enigma fell to Pasteur, and was his first step upon the ladder of fame. Pondering over the note Pasteur asked himself the question: "How can it be admitted these substances are alike in all the particulars enumerated without concluding that the two substances are absolutely identical? Is there not a profound incompatibility between the identity affirmed, and the discrepancy of optic character manifested by the two compounds which form the subject of this note.

Time will not allow of our following the numerous observations and experiments which preceded Pasteur's explanation of the difficulty, which the note of Mitscherlich had thrown down as a kind of challenge to science; suffice it to say he proved the crystals were not identical, that the paratartrate was made up of two kinds of crystals, one causing the plane of polarisation to rotate to the right, the other to the left, and he further proved the neutrality of the paratartrate to be due to the equal mixture of the right and left handed crystals which, when dissolved, exactly neutralised each other. Before this the left handed tartrate was unknown. This discovery excited in a high degree the attention of the Academy of Sciences, it is said the Academy was astounded; the verification was awaited with much scepticism, and the favourable report received with much enthusiasm by that body. It was moved that the report be inserted in the collected memories of the Academy, an exceptional honour arrived at for the most part at the end of the learned members' career, whereas at this time Pasteur was only 25 years old.

Nominated assistant professor of chemistry at Strasburg, Pasteur followed up with such enthusiasm these curious studies that it is stated on the very morning of his marriage it was necessary to go to his laboratory to remind him of the event that was to take place on that day. It had been observed that the impure commercial tartrate of lime, sullied with organic matters of various kinds, fermented on being dissolved in water and exposed to summer heat. Pasteur prepared some pure, right-handed tartrate of ammonia, mixed with it albuminous matter, and found that the mixture fermented; the solution, limpid at first, became turbid, and the turbidity he found to be due to the multiplication of a microscopic organism, which found in the liquid its proper aliment. Pasteur recognised in this little organism a *living ferment*. He next permitted his little organism to take

the carbon necessary for its growth from the pure paratartrate of ammonia which, it will be remembered, does not turn the plane of polarised light either to the right or the left, soon after fermentation had set in, a rotation to the left was noticed, for Pasteur had the forethought of following the course of the operation with the aid of the polariscope, proving that the equilibrium previously existing in the solution had been disturbed, after a time the fermentation ceased, and it was found the right-handed acid had entirely disappeared, and when evaporated the residue furnished a beautiful crystalisation of the left-handed tartrate of ammonia.

We may note a very remarkable fact in connection with this experiment, namely that the microscopic organism, the cause of the fermentation, was able to select its own food. It found as it were one of the tartrates the more digestible, and appropriated it to the neglect of the other. Here we find Pasteur landed amid the phenoma of fermentation, and with true scientific instinct he closed with the conception that ferments are, in all cases, *living things*, and that substances formerly regarded as ferments are, in reality, the food of the ferments. Touched by this wand difficulties fell rapidly before him, and among other things he was the first to prove a vegetable organism could live and multiply upon a purely mineral soil.

Arrived at this unexpected turn in the road he had hitherto pursued, Pasteur was undecided whether or not to quit the domain of molecular physics and chemistry, for the fascinating study of the infinitely little. He was now thirty-two, and being nominated Dean of the Faculté des Sciences at Lille, seems to have determined his choice. One of the principle industries of the Département du Nord, is the fabrication of alcohol, and he resolved to devote a portion of his time to the study of fermentation, hoping he might make himself directly useful to those engaged in that industry.

All that lives must die, all that is dead must be disintegrated, dissolved, or gasified ; the elements which are the substratum of life must enter into new cycles of life ; if things were otherwise, the matter of organised beings would encumber the surface of the earth, and the law of continuity cease for want of materials. One grand phenomenon presides over the vast work, that of fermentation. Until Pasteur's time, fermentation, *only a word*, suggesting to the mind simply the internal movements which all organised matter manifests after death without the intervention of the hand of man. The question before his discoveries was often asked, what is the cause of fermentation, of putrefaction, and of slow combustion ? How is the disappearance of the dead body or the fallen plant to be accounted for ? What is the explanation of the foaming of the must in the vintage cask ? of dough, which left to itself rises and becomes sour ? of milk which curdles ? of blood which putrefies ? of the heap of straw which becomes manure ? of dead leaves and plants imbedded in the earth, which transform themselves into soil ? Many attempts were made to answer these questions, to account for the great mystery which surrounded these phenomena. One theory, at the time of which we are now speaking, held almost undisputed sway ; it was a very ancient theory to which the great chemist Liebig in reviving it had given the weight of his name. "The ferments," said Liebig, "are all nitrogenous substances —albumen, fibrine, caseine, or the liquids which embrace them, milk, blood, urine—in a state of alteration which they undergo in contact with air." The oxygen of the air was, according to his view, the first cause of the molecular breaking up of the nitrogenous substances. Another view held by some very able men was, that it was an albuminoid substance which acted by its presence only. Yeast, one of the ferments most in use, had been examined by various naturalists, and they saw this yeast which is composed of cells multiplying itself by budding, and proposed to themselves the question whether the fermentation of sugar was not connected with this act of cellular vegetation ? But, as in other fermentations the existence of an organism had not been discovered even by the most careful search, the hypothesis was abandoned. The great M. Dumas, for example, recognised that in the budding of the yeast cells there must be some clue to the phenomenon of fermentation ; but he adds, "I, however, repeat that as nothing of the kind has been found elsewhere, and as all other fermentations presented the common character of requiring to put them in train organic matter in a state of decomposition, the hypothesis (of Cogniard-Latour) remains a simple incident instead of having the value of a scientific principle." Liebig further contended, carrying general opinion along with him, that it is not because of its being organised that yeast is active, but because of its being in contact with air. It is the dead portion of the yeast, that which has lived and in the course of alteration, which acts upon the sugar. Books, memoirs, dogmatic teaching, all were favourable to the theoretic ideas of Liebig. If a few rare observers indicated the presence of living organisms in certain fermentation, this presence was, in their opinion, a purely accidental fact, which, instead of favouring fermentation, was injurious to it.

From his first investigation on lactic fermentation, Pasteur was led to take an entirely different view of the matter. In this fermentation he recognised the presence and the action of a living organism, which was the ferment just as yeast was the ferment of alcoholic fermentation. The lactic ferment consists of little rods nipped at their centres, extremely small being hardly the thousandth part of a millimetre in diameter. (Millimetre is 1-25th of an inch). It reproduced itself by fission—that is to say the little rod divided itself at the middle, and formed two shorter rods, which became elongated and in their turn repeated the process. Why had not this been observed prior to Pasteur ? because lactic fermentation had never been observed except in complex substances. The first care of Pasteur, with the view of proving the presence of the ferment and its life, was to replace the cheesy and other matters by a soluble, nitrogenous body which would permit of the microscopic examination of all the living cellular products. He then inoculated the clear solution with a mere trace of the grey matter commonly seen with a good ordinary lactic fermentation. By the next day a lively and regular fermentation had set in, the liquid becoming turbid, a deposit simultaneously taking place at the bottom of the vessel. This deposit was the lactic ferment. These results, however, did not satisfy Pasteur, he feared the contact theory, or Leibig's theory of communicated molecular motion might still find some credit. He therefore made two crucial experiments, the one relating to the yeast of beer or of alcohol, the other to the lactic ferment. He introduced into a pure solution of sugar, a small quantity of crystallisable salt of ammonia, some phosphates of potash and magnesia, and he sowed in this medium a mere trace of fresh yeast cells. The cells thus sown multiplied and the sugar fermented. In other words, the phosphorus, the potassium, the magnesium of the mineral salts united to form the substances which compose the ferment. By this experiment, so simple and yet so demonstrative, the power of the organism—the ferment, was once for all established. The contact theory of Berzelius had no longer any meaning, since it was evident that the fermentable matter here furnished to the ferment one of its essential elements, namely, carbon. Liebig's theory was also quashed, as all abuminoid substances had been discarded. Fermentation was thus proved to be a phenomenon of nutrition. The ferment increased in weight, feeding upon the sugar, and its vitality was such that it contrived to build up the complex materials of its own organisation by means of sugar, and purely mineral elements. In a second experiment Pasteur demonstrated that notwithstanding their small-

ness the little particles of lactic ferment were indeed alive, and that they, and they only, were the cause of lactic fermentation. Thus the theories of contact force or of communicated motion, which up to that time had reigned in science, were completely overthrown.

The light shed by these experiments quickly extended its sphere; Pasteur soon discovered a new ferment, that of butyric acid, and proved, contrary to the general belief, that the lactic ferment could not give rise to butyric acid; this ferment consists of a species of vibrio. Little transparent cylindrical rods, isolated or united in chains of two or three, or sometimes more. They move by gliding, the body straight, or bending and undulating, and by this circumstance differ from the alcoholic and lactic ferments, furnishing irrefutable proof of its organisation and life. This ferment also presented to Pasteur a new and unexpected peculiarity; the vibrios live and multiply without the smallest supply of air, or of free oxygen. Not only indeed do they live without air, but air destroys them and arrests the fermentation which they initiate. Carbonic acid does not affect them, but if atmospheric air is made to pass into the liquid for only one or two hours, the vibrios fall without movement to the bottom of the vessel, and the butyric fermentation is immediately arrested. Pasteur named this new class of organisms, anaérobies, namely, beings which can live without air; while the other microscopic beings which, like the larger animals, cannot live without free oxygen he named aérobies. Further experiments showed the activity of other ferments largely depended upon the exclusion of air, when they were obliged to take the oxygen they required, from the fermenting substance, inducing charges in larger volumes of matter. The unexpected light which these facts threw upon the cause of the phenomena of fermentation, made a forcible impression upon all thinking minds, and M. Dumas one day rightly said to M. Pasteur, before the Academy of Sciences, "You have discovered a third kingdom of which the members do not require air for their existence."

But there is still another class of chemical phenomena where life without air, of microscopic organisms, is fully shown; Pasteur proved that in the special fermentation which bears the name of putrefaction, the cause resides in the microscopic vibrios of the same order as those which compose the butyric ferment. The fermentation of sugar, of mannite, of gums, of lactate of lime by the butyric vibrio, so closely resembles the phenomena of putrefaction, that one might call these the putrefaction of sugar, and of the other substances. It has been thought right to call the fermentation of animal matters putrefaction, because at the moment of the decomposition of fibrin, blood, etc., they give rise to putrid odours, due to the evil-smelling gases of sulphur and phosphorus. Long before Pasteur's time it was known low forms of life were associated with, and by some it was thought they might influence the phenomena of putrefaction, but proofs were wanting, and we may read in his lessons on chemistry with what disdain the great chemist Leibig mentioned these hypothetical opinions: "Those who pretend to explain the putrefaction of animal substances by the presence of animalculæ," he wrote, "reason very much like a child who would explain the rapidity of the Rhine, by attributing it to the violent motions imparted to its waters by the numerous mill wheels upon its course. Is it possible to consider plants and animals as the cause of the destruction of other organisms when their own elements are condemned to undergo the same decompositions as the creatures which have preceded them? If the fungus is the cause of the destruction of the oak, if the microscopic animalculæ is the cause of the putrefaction of the dead elephant, I would ask in my turn what is the cause which determines the putrefaction of the fungus, or of the microscopic animalculæ when life is withdrawn from them?" This argument was considered by Liebig and others irrefutable.

To demonstrate that life presides over the work of death Pasteur made two experiments. He first introduced into vessels air deprived of all dust, in these vessels containing pure air were placed the water of yeast, with sugar dissolved in it, milk and sawdust—all of which had been deprived by heat of all germs—the vessels and their contents were then raised to a temperature of 35 C. In a series of parallel experiments made under the same conditions, Pasteur took no steps to prevent the germination of the little seeds of mould suspended in the air, or associated with the substances contained in the vessels, neither did he avoid other germs of the class of aérobies. When the air of all the vessels of the two series were submitted to analysis, a very interesting fact disclosed itself. In the vessels where there were no germs the air still contained a large proportion of oxygen, in the others oxygen was totally absent, and had been replaced by CO_2. The consumption of the oxygen had only occupied a few days, while in the vessels without germs there remained after several years a considerable quantity of oxygen in a free state. These experiments showed that in the absence of organic life, oxidation, if it takes place at all, is very slow indeed.

But can these organisms, after having decomposed or burnt up all these secondary products be, in their turn, decomposed? "How," cried M. Bouillaud, repeating his question "can they be destroyed or decomposed?" "A ferment which has finished its work," replied Pasteur, "and which for want of food cannot continue it becomes in its turn an accumulation, so to speak, of dead organic matters, and subject in their turn to the same laws which govern all decay." The ferments of the ferments are simply ferments, and where the conditions of their life exists there will it go on. In the ice of the polar regions antediluvian elephants have been found perfectly intact, the organisms could not live in so cold a temperature, and it is owing to this circumstance we now get part of our meat supply from remote parts of the earth. These facts strengthen, if that were needed, the comparatively new ideas as to the important part played by these infinitely small organisms, which are in fact the masters of the organic world. What would happen if we could suppress their work? The surface of the globe, encumbered by organic matters would soon become uninhabitable.

Everybody knows that wine left to itself in circumstances which occur daily, becomes sour, in other words is frequently transformed into vinegar. A great controversy raged as to the cause of this phenomenon. The celebrated theory of Leibig, which Pasteur was destined to overthrow, might be thus summed up: "If pure alcoholised water cannot become sour in contact with air, as is the case with wine, it is because it lacks the albuminoid substance which exists in wine in a state of chemical alteration, and which is a ferment capable of causing the oxygen of the air to combine with the alcohol to form vinegar. And the proof, according to Leibig, that things act vigorously thus is, that if you add to the mixture of OH_2 and alcohol a little flour or meat juice, or vegetable juice, the acetic fermentation arises as if by compulsion. In other words, by the addition of a small quantity of any nitrogenised substance in process of alteration, you cause the union of the oxygen of the air with the alcohol. There is doubtless always in wine, when it turns sour, a necessary intermediary, since it is quite true that in no circumstances can pure alcohol, diluted to any degree, transform itself into vinegar; but this necessary intermediary is not, as the German theory had it, a dead albuminoid substance, it is a plant, and of all plants one of the simplest and most minute which has been known from time immem-

morial as the flower of vinegar. This little fungus is invariably present on the surface of a wine which is being transformed into vinegar. Leibig was aware of this, but he regarded it as a simple coincidence and said, "vinegar affords a refuge to the flower of vinegar, just as it gives refuge to what are called the little eels of vinegar." This is a good example of the errors into which so-called practical men fall, and illustrates the uncertainties of observations without experiments. The great art—and no one practised it better than Pasteur—consists in instituting decisive experiments which leave no room for inexact interpretation of facts. These decisive proofs of the true part played by the fungus, known as the flower of vinegar (mycoderma aceti) are thus formulated by Pasteur. Let us place a little wine in a bottle, then hermetically seal it and leave it to itself. In these conditions the wine becomes sour. But if the contents of the bottle be heated a few instants to a temperature of 60 C., and if, after cooling, we leave the bottle to itself its contents never become changed to vinegar, although the heating must have left intact the albuminoid or nitrogenous substances contained in the wine. These then cannot, as contended by Leibig and his school, constitute the ferment of the vinegar. If it be contended that the heating has altered their qualities so that they can no longer act as a ferment, such an hypothesis is disposed of by the following experiment: open the bottle, blow into it with bellows so that the once heated wine shall come in contact with ordinary air, and the acetification of the wine will take place. But the master experiment is the following: we have been told that pure alcoholised water never turns sour unless some albuminoid matter is introduced into it. Pasteur knew the albuminoid matter only served as a food for the real cause, the *mycoderma aceti*, and substituted for it certain crystalisable substances upon which the ferment could feed, and in these conditions after adding a drop or two of acetic acid, it was possible actually to see the organism developing side by side with the conversion of the alcohol into acetic acid. There is a great charm in seeing an obscure subject clearly illuminated by facts, well understood, and well interpreted. Bottled wine raised to a temperature of 50 or 60 C. does not turn sour, because that temperature destroys the fungus which wine always holds in suspension. Take out the cork, the germs which are contained in ordinary air enter, and turn the wine sour. Pure alcoholised water never turns sour, even in contact with ordinary air because, though germs reach it, they cannot become fertile and grow for want of food. Wines in bottles well filled and laid flat do not acetify, because the mycoderma cannot multiply for want of oxygen. When the bottle is upright the conditions are quite altered, the dry cork renders it more permeable to air, and the germs, if any exist, are enveloped by air.

The practical bearing of most of Pasteur's work was not wanting in his experiments upon the acetic fermentation. Great improvements in its manufacture soon followed his discoveries, the causes of its deterioration were pointed out and avoided, and great annual losses were prevented. Every step in the process is of great interest, but we must pass on to other subjects that engaged his attention.

(To be continued.)

ARMY VETERINARY DEPARTMENT.

From *The London Gazette*,

WAR OFFICE, Pall Mall, Aug. 23rd.

Veterinary-Captain J. H. Jackson retires from the service receiving a gratuity.

J. J. Griffith, gent., to be Vet.-Lieutenant, vice H. C. Harris, deceased.

VICTORIA VETERINARY BENEVOLENT FUND

Amount already acknowledged £670 17s. 6d.

	Donations.			Life Membership.			Subscriptions.		
	£	s.	d.	£	s.	d.	£	s.	d.
Rankin, J. D.	0	10	0	—			—		
Hamilton, D.		—		—			1	1	0
Baker, G. W.		—		—			0	10	6
Gowing, T. W. & Son	1	1	0	—			—		
Barber, J. S.		—		—			1	1	0
Eadie, J.	0	5	0	—			—		
Cattel, A. J.	1	1	0	—			—		
Squair, C. A.		—		—			0	10	6
Gledhill, A.		—		—			0	10	6
Flanagan, W. G.	1	1	0	—			—		
Walder, F. T.		—		—			0	10	6
Heil, L.	1	1	0	—			—		
Symes, T. J.		—		—			0	10	6
Stevens, T.		—		—			0	10	6
Sikes, C. W. B.		—		—			0	10	6
Berry, W. G.		—		—			0	10	6
Morgan, E.		—		—			0	10	6
Heley, W. J.		—		—			0	10	6
Reid, W. M.	1	1	0	—			—		
Harris, Vet.-Capt.	0	10	6	—			—		
Golledge, J.		—		—			0	10	6
Worthington, W.	1	1	0	—			—		

Total to date £686 6 6

W. F. BARRETT, *Hon. Sec. and Treas.*

FILARIA STRONGYLUS OR FALSE TUBERCLE IN THE PIG, SHEEP, AND GOAT.

Dr. R. SYDNEY MARSDEN, Birkenhead, read a paper at the meeting of the British Medical Association at Edinburgh.

This is a zoo-parasitical disease of frequent occurrence in the animals mentioned. Its description, however, was not to be found in any text-book on meat inspection. Dr. Marsden believed that lungs so affected were constantly seized and condemned as tuberculous. On examination the affected lungs might be slightly congested or even appear normal. The surface was covered with small light brown or grey patches of from the size of a pin's head to that of a pea in the midst of small zones of congestion. The patches formed little raised tumours or granulomata resembling those of tuberculosis, but softer and more hyaline. They were scattered through the lungs and formed growths in section of the size of a farthing or a halfpenny. On taking them between the finger and thumb they were less firm and resistant than tubercle, and their size was not so great as a rule. On section they looked like tubercle with their hyaline grey appearance and the opaque yellow of their older and retrograde stages. On passing the finger over these growths a gritty feeling could be detected much resembling that of tubercle, but less harsh. They appeared to be formed wherever an egg of the strongylus was arrested and became the centre of a granuloma. The structure exactly resembles that of tubercle—namely, giant cells, epithelioid zone, and small-celled external zone, but the distinguishing feature was the presence of one or more ova. The commonest sites of infection were the lungs, kidneys, and liver, and the best description of the disease is that given by Professor Boyce, its discoverer. As a practical conclusion Dr. Marsden pointed out that affected organs should be seized and destroyed, but the flesh of the animals was not affected. There was no emaciation and the brightness and "setting" qualities of the meat were not altered.—*The Lancet.*

A PLEA FOR THE FOR THE MORE GENERAL USE OF TUBERCULIN.

The following summary is of a paper read by Prof. McCall Anderson at the recent meeting of the British Medical Association :—

At the outset he expressed his regret that the widespread laudation with which the tuberculin treatment was ushered in had given place to an almost total neglect of it by the bulk of the profession in this country. The reasons of this were not far to seek. Too much was at first expected from it and it was used in too wholesale a manner ; The cases were not selected carefully enough and the doses were generally too great or the intervals between the injections too short. After giving the original tuberculin a fair trial he was satisfied of its value and gave cases illustrative of its use (*a*) for diagnostic purposes ; (*b*) for discovering foci of disease in unexpected situations ; and (*c*) a curative agent. He had not had sufficient experience of the new tuberculin to enable him to compare it with the old, but he was rather inclined to think that the former is the milder and safer of the two for purposes of treatment, while the latter is probably more useful for purposes of diagnosis. The latter is certainly much cheaper, the full dose costing less than a penny, as against seventeen shillings in the case of the new tuberculin. While admitting the accuracy of many observers to the effect that the treatment is often only temporarily beneficial, he suspected that this not infrequently arises, from omitting to act on the principle that there are two almost equally potent factors in the production of tuberculous disease—viz., (*a*) the tubercle bacillus, and (*b*) the soil favourable to its growth and development. In all cases, therefore, the tuberculin injections must be combined with good food, pure air, cod liver oil and other anti-strumous remedies, if permanent beneficial results are to be obtained.

Rival "Vets."

Mr. James Murray Stewart, veterinary surgeon, Swansea, brought an action for damages and to secure an injunction against Mr. Thomas Dick, another veterinary surgeon.—Mr. Villiers Meager was for the plaintiff, and Mr. L. M. Richards for the defendant. From Mr. Meager's opening statement it appeared that in May last Mr. Dick agreed to enter the service of Mr. Stewart as an assistant, and signed covenant whereby he consented to pay £50 a month to Mr. Stewart, if he practised or dealt in horses within a radius of 50 miles of Swansea, within the next 50 years, unless in connection with Mr. Stewart. A month ago, the latter met with an accident, and was confined to his bed. Since then Mr. Dick had entered the service of Mr. Gladstone Davies, a rival veterinary surgeon. Mr. Richards contended that the covenant entered into was extremely unreasonable, and that Mr. Dick had been discharged. His Honour found that Mr. Dick had broken the contract, and plaintiff would be awarded £10 damages. He also granted an injunction restraining Mr. Dick from practising within 50 miles of Swansea within 50 years, according to the terms of the agreement.—*South Wales Daily Post.*

The Spaying of Cows in Switzerland.

The spaying of cows is an operation that is being resorted to with increasing frequency in the Swiss cantons of Vaud and Geneva, where it has now received a kind of official sanction in that, after each operation, the veterinarian makes a distinctive slit in the left ear of the cow that has been spayed, and sends a declaration to the district inspector of animals. This official then registers the cow as *bœuve*, and indicates the animal as such in the certificate of health which is issued in connection with the sale of the animal or transference to an abattoir. The operation is not universally successful, though, owing to the employment of antiseptic measures, losses are very rare. With regard to the effect of spaying upon the lactation of milch kine, a diminution in the yield of milk is habitually noticed in the case of very old cows and of cows which are already in the declining stages of the period of lactation. On the other hand, cows that are spayed at the time of their fourth or fifth calf, and shortly after calving, continue to give a profitable flow of milk for 24 to 27 months. As to the quality of the beef afforded by these spayed cows it is sufficient to say that butchers are always on the look out for the *bœuves*, which, naturally but not too rapidly fattened, yield meat of excellent quality. Quick fattening, indeed, is out of the question, for it is obvious that a lean cow, spayed perhaps at ten years old, could not be expected to become a *bœuf de Pâques*—or, as we should say, a Christmas beast—after a few weeks' forced feeding.—*The Times.*

Horses in the Soudan. A Reuter's despatch from the camp at Makawiyeh, Aug. 19, says : "The horses are feeling the effect of the heavy day marches and several cases of laminitis have occurred."

OBITUARY.

Thomas Dike Broad, F.R.C.V.S., Bath.
Graduated, Lond., Jan.,1842.

Mr. Broad passed away at Henrietta Street, on Sunday, August 21st, in his 82nd year. The deceased gentlewas born at Winsley, and commenced business at Trowbridge. He removed to Bath a few years later, and for nearly half a century maintained the well-known establishment in Broad Street. About six years ago Mr. Broad retired from business life, and was succeeded by his son-in-law, Mr. Thomas Aubrey, and for the last 12 months has been confined to his bed-chamber. He was taken worse on Saturday and died the following day from pneumonia, leaving behind him six daughters and a son, who is a veterinary at Bristol. Mr. Broad made a special study of horse-shoeing, and for the last 50 years was the greatest living authority in England on this speciality. For 20 years he officiated as sole judge in the horse-shoeing section of the Bath and West of England Shows, and his services in this direction were sought from various parts of the country. From 1861 to 1874 Mr. Broad was a member of the Council of the R.C.V.S., and was elected a Fellow in 1877. He was consulting veterinary surgeon for the county of Somerset, veterinary inspector for the city of Bath, and surgeon to the Bath S.P.C.A. Mr. Broad never took an active part in public life.—*The Bath Herald.*

CORRESPONDENCE

CRUELTY TO ANIMALS? OR TO MEN?

Sir,

I know your sense of justice will be shocked by the following :—

On Monday week last a carman was charged by the police with working a horse when lame, the said horse had an hour previously been knocked over and badly hurt, and was consequently stiff and sore. On the evidence of the policeman the carman was convicted at Brentford the following day and fined 20s. and costs. This sentence might be upheld, but the police having

gained a victory, at once sought another victim in the person of the horsekeeper, whom they immediately summoned for sending the horse out of the stable unfit for work. I saw the horse two days after the accident and found him lame from the injuries sustained.

I attended the Court to-day and gave evidence to the effect that the horse was slightly lame from these injuries and these *alone*, there being quite sufficient external evidence to justify such an opinion. The horsekeeper also swore that the horse went away from the stable perfectly sound. In spite of these uncontradicted statements the magistrates peremptorily fined the unfortunate horsekeeper £1 and costs.

Which, sir, do you think suffered the greater cruelty?—Yours faithfully,

HENRY DYER.

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Capt A. J. Haslam, M.D., Messrs. W. Alston Edgar, J. B. Tutt H. Dyer, J. M. Stewart.

Report of Colonial V.S. 1897 (Cape), *The Bath Herald.*

Original articles and reports should be written on one side only of the paper, and authenticated by the names and addresses of the writers, not necessarily for publication.

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Alterations for this list must be duly notified by the Secretaries

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